

SNOW SHOVEL HAVING ADJUSTABLE SNOW DEBT REMOVING FEATURES

BRIEF DECRPTION OF THE DRAWING

001 Figure 1 is a front elevation view of the snow shovel in accordance with the present invention;

002 Figure 2 is a side elevation view of the snow shovel of Figure 1;

003 Figure 3 is a rear perspective view of the snow shovel, with the runners in the stored position of Figure 1;

004 Figure 4 is a exploded view of the telescopic relationship between the handle legs and the runner members;

005 Figure 5 is a schematic of the snow shovel with the runner member completely telescoped into the handle legs;

006 Figure 6 is a view similar to Figure 5 with the runner member telescoped into an intermediate position;

007 Figure 7 is a view similar to Figure 6 with the runner member telescoped into its maximum extended position;

008 Figure 8 is a scematic showing the snow shovel of a present invention being propelled by the body of a user;

009 Figure 9 is view similar to Figure 3 except the curved sled like runners have been replaced with wheels or rollers;

010 Figure 10 is still a schematic of a shovel with a blade in the shape of a elongated Z.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

011 Reference is made to Figure 1 and 2, respectively, illustrating a front and side elevation views of a snow shovel generally depicted by the character numeral 10. The shovel 10 comprises three major components: a blade 12; a handle 14; and a set of runners 16. The blade is made from wood products or a durable but light weight material, for example, aluminum or a high density plastic such as a high density polyolefin and preferably has dimensions suitable for use by both women and men. While it is preferred that the blade be essentially flat, it is contemplated that the present invention could be used with curved blade if desired. Blade 12 with a lip 12A to assist in deflecting the snow moving on to the blade 12.

012 The handle 14 preferably has a squared C shape configuration and may be fabricated from tubular aluminum or other metals. The handle 14 can be made of high density polyolefin. Showned in Figure 3 the distal ends of the legs 18 of the handle 14 has two cross members 14A and 14B. The function of 14A and 14B is to give stibility to the shovel and to be used as the mounting platform for blade 22. 14A and 14B can be secured to handle 14 by the use of welding or in case of the use of high density polyolein can be poured in one unit. The blade 22 can be secured to cross members 14A and 14B by any appropriate fastener or by welding in case of using metal.

013 As perhaps best seen in figure 8A a runner 30 is associated with each leg 18 and comprises a tubular straight portion 30 that is telescopically attached within the distal end portion of leg 18 and a curved portion or "sled" 34. Straight portion 30 is provided with a spring biased button 36 that can be manually depressed, allowing portion 30 to be moved relative to leg 18 and snap-locked positioned in one of a plurality of apertures 38 in leg 18 depending on the length that is desired for running 30. A simple carter pin or screw could provide the same function as the spring biased button at a lesser cost.

014 To lock the runners 34 into a non-operative position, button 36 is depressed and portion 30 rotated relative to leg 18 and telescoped inward to the top hole 32 on Figure 8A.

In this position runner, the sled 34 is confined within the perimeter of the blade 12, and shovel 10 may be used in the conventional sense as seen in Figure 5. When extended beyond the edge of the blade 12, the sled 34 is designed to glide over or near the ground surface 40 beneath a blanket of snow 42 as shown in the schematics of Figure 6 and 7. The curvature of sled 34 literally slides over the ground with minimal friction due to the snow. In a shortened position, as illustrated in Figure 6, blade 12 is positioned only a short distance above the ground. In contrast, the extended position of the runner 30 in Figure 7 causes the bottom edge of the blade 12 to be positioned higher above the sled 34 and thus the ground. Thus, for a given depth of snow, the figure 6 adjustment of the runner 30 would move snow to a greater depth than the adjustment of Figure 7. When a snow of larger depth has occurred, the runner 30 can be extended to its maximum and the top several inches of the snow removed in one pass with the shovel. For the next pass, the extension of the runner 30 can be reduced thereby lowering the edge of the blade 12 closer to the ground so that another several inches can be removed. In this manner, the entire layer of snow can be removed easily with several passes of the shovel, as the extension of the runner 30 is reduced with each pass, without great effort.

015 As shown in fig. 8B the shovel 10 is further designed so that the shovel is moved by use of a persons arms and hands and if desired by the user's body in the manner of a plow. The blade 12 and the handle 14 is preferably used at an angle of about 30 to 45 degree with the horizontal so that the pad 26 can be pressed against the stomach area 46 of the user as illustrated in the schematic of Figure 8B. The user literally can push the shovel 10 with his or her body. Cushioned pad 26 is used to prevent injury to the user in case of a sudden stop.

Because the horizontal component of the force exerted by the user against is equal to or greater than the component of the force acting normal to the surface of the ground, the shovel riding on the sled members 34 moves relatively easily through the level of snow being removed.

016 The view provided by Figure 9 shows a modified version of the adjustable snow shovel of the present invention. In place of the curved sled like members 34, a pair of dual wheels 48 may be positioned on the end of the adjustable runner 30. The wheels serve the same purpose as the sled members by providing a reduced friction for the blade as it is being moved through the snow. Although it is preferred in this embodiment to use dual wheels for each runner, a pair of single wheels will serve the same function. The wheels could be made of any suitable durable material. The view provided by Figure 9A is a side view of Figure 9.

017 Figure 10 is a view of a shovel that uses a blade in the shape of a Z. The blade 54 has a lip at both ends to give the blade 54 an elongated Z shape. The adjustable snow depth feature can be incorporated into this shovel. The blade can be made of light weight metal or formed by using high density plastic or pololefin.

018 Figure 11 is a side view of Figure 10.